

process via its registered agents and via its corporate officers. Comerica Inc. is a publicly traded company on the New York Stock Exchange under the symbol “CMA.”

3. On information and belief, Defendant Comerica Bank (“Comerica Bank”) is a Texas banking association legally organized under the laws of Texas having a principal office located at 1717 Main Street, MC 6404, Dallas, Texas 75201. Comerica Bank is a subsidiary of Defendant Comerica Inc. Comerica Bank may be served with process via its registered agents and/or its corporate officers. The term “Comerica” is used herein to refer to Defendant Comerica Inc. and all of its subsidiaries, including Defendant Comerica Bank.

4. On information and belief, the Comerica Defendants do business in three major business segments: the Commercial Bank, the Retail Bank, and Wealth Management segments, in addition to a Finance segment. Comerica “operates in three primary geographic markets—“Texas, California, and Michigan, as well as in Arizona and Florida, with select businesses operating in several other states, and in Canada and Mexico. *Comerica Incorporated Annual Report 2020*, at p. 9, COMERICA, *available for download at* <https://investor.comerica.com/annual-reports> (hereinafter “2020 Annual Report”). The Comerica Defendants provide “various products and services, including without limitation, commercial loans and lines of credit, deposits, cash management, capital market products, international trade finance, letters of credit, foreign management services, loan syndication services, consumer lending, consumer deposit gathering, mortgage loan origination, consumer products, fiduciary services, private banking, retirement services, investment management and advisory services, investment banking services, brokerage services, the sale of annuity products, and sale of life, disability and long-term care insurance products.” *Id.*

5. On information and belief, the Comerica Defendants, individually and via their subsidiaries, partners, and affiliates, including Elan Financial Services (“Elan Financial”), contract

with and issue credit and debit cards to their customers (“cardholders”) to provide card services. *See Comerica Debit Mastercard® & ATM Card*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/debit-atm.html> (last visited February 11, 2022); *Comerica Credit Cards*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/comerica-credit-card.html> (last visited February 11, 2022). On information and belief, the Comerica Defendants, individually and via their subsidiaries, partners, and affiliates, including Elan Financial, also provide mobile and online banking services associated with their banking products, such as credit card, debit card, checking, and savings accounts. *See Banking Products*, COMERICA, <https://www.comerica.com/personal-finance/banking.html> (last visited February 11, 2022). The Asserted Patents cover Comerica’s products, services, and methods related to the offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via banking products, including checking, savings, credit, and debit card accounts, which are designed, developed, manufactured, distributed, sold, offered for sale, and used by the Comerica Defendants and/or their customers, consumers, and clients. For example, as part of their *Banking Products*, Defendants infringe the Asserted Patents via at least Comerica’s “Comerica Credit Cards,” “Debit Card & ATM Card,” “Mobile Banking,” and “Mobile Wallet,” which are services that allow Comerica’s clients and consumers to conduct financial and banking transactions via banking, credit, and debit accounts. *See Banking Products*, COMERICA, <https://www.comerica.com/personal-finance/banking.html> (last visited February 11, 2022). Moreover, Defendants’ infringing banking product systems and processes are compatible with application-based (“app”) mobile payment methods, such as Google Pay and Samsung Pay, that are installed on a consumer’s device, such as a mobile phone, tablet, or smartwatch. *See, e.g., Mobile*

Wallets, COMERICA, <https://www.comerica.com/personal-finance/banking/online-services/mobile-wallet.html> (last visited February 11, 2022).

6. On information and belief, Defendants, on their own and/or via subsidiaries, partners, and affiliates maintain a corporate and commercial presence in the United States, including in Texas and this District, via at least its 1) physical bank locations, operation centers, and ATM locations established throughout Texas, including this District; 2) Comerica's online presence (e.g., [comerica.com](https://www.comerica.com)) that provide to consumers access to Comerica's banking products and services, including those identified as infringing herein; and 3) consumers and clients of Comerica who utilize Comerica credit card and debit card account services, at the point of sale, including via contactless payment methods, in numerous merchant physical and online sites, i.e., retail stores, restaurants, and other service providers accepting Comerica credit and debit cards. *See, e.g., Mobile Wallets*, COMERICA, <https://www.comerica.com/personal-finance/banking/online-services/mobile-wallet.html> ("Use your Comerica debit and credit card on [for example] Samsung Pay and Google Pay™ to make checkouts at your favorite retailers convenient, fast, and secure. Pay confidently from your mobile device knowing that the same fraud protection Comerica gives your credit and debit card carries over to your mobile wallet.") (last visited February 11, 2022). Such credit and debit card account services include systems and methods for processing digital transactions, via online transactions and mobile payment solutions. *See id.* ("Rather than entering your credit or debit card number and address details, select your mobile wallet where accepted when shopping online and in-app to save time."). Defendants, on their own and/or via alter egos, agents, subsidiaries, partners, and affiliates maintain banking branch locations in this District located, as one example, at 8422 Dallas Pkwy, Frisco, TX 75034, among other properties found at

<https://locations.comerica.com/>. Thus, the Comerica Defendants do business, including committing infringing acts, in the U.S., the state of Texas, and in this District.

JURISDICTION AND VENUE

7. This action arises under the patent laws of the United States, namely 35 U.S.C. §§ 271, 281, and 284-285, among others.

8. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

A. Defendant Comerica Inc.

9. On information and belief, Defendant Comerica Inc. is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this State and this District, including: (A) at least part of its infringing activities alleged herein which purposefully avail the Defendant of the privilege of conducting those activities in this state and this District and, thus, submits itself to the jurisdiction of this court; and (B) regularly doing or soliciting business, engaging in other persistent conduct targeting residents of Texas and this District, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported and services provided to and targeting Texas residents and residents of this District vicariously through and/or in concert with its alter egos, intermediaries, agents, suppliers, distributors, partners, subsidiaries, clients, customers, affiliates, and/or consumers, including, but not limited to, its subsidiary Comerica Bank and Elan Financial.

10. For example, Comerica Inc. owns and/or controls subsidiaries and affiliates, including, but not limited to Defendant Comerica Bank, that have a significant business presence in the U.S. and in Texas. *See, e.g., Subsidiaries, COMERICA*, <https://www.comerica.com/about-us/company-overview/company-information/subsidiaries.html> (last visited June 14, 2021). In the

“Texas Market,” for example, “Comerica became the largest U.S. banking company headquartered in Texas. The Texas Market of Comerica Bank includes full-service banking centers in key Texas metropolitan areas, including Dallas-Fort Worth, Houston, Austin, San Antonio and Kerrville.” *Id.*

11. Such a corporate and commercial presence in Texas, including in this District, by Defendant Comerica Inc. furthers the development, design, manufacture, distribution, sale, and use of Comerica Inc.’s infringing products, services, and methods for offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via credit and debit cards and associated accounts. Through direction and control of its alter egos, suppliers, intermediaries, agents, subsidiaries, and affiliates, including but not limited to direction and control of Defendant Comerica Bank and its partnership with Elan Financial, Comerica Inc. has committed acts of direct and/or indirect patent infringement within Texas this District, and elsewhere in the United States. Such acts give rise to this action and/or have established minimum contacts with Texas such that personal jurisdiction over Comerica Inc. would not offend traditional notions of fair play and substantial justice.

12. On information and belief, Comerica Inc. controls or otherwise directs and authorizes all activities of its alter egos, suppliers, intermediaries, agents, subsidiaries, and affiliates, including, but not limited to Defendant Comerica Bank and Elan Financial. For example, Defendants Comerica Inc. and Comerica Bank have the same headquarters located in Dallas Texas. Defendants and its subsidiaries, such as Comerica Bank & Trust, National Association, Comerica Management Co., Inc., Comerica Securities, Inc., and Comerica Leasing Corporation, all do business in Texas. Moreover, Elan Financial, a division of U.S. Bank, has offices in Irving, Texas, where, on information and belief, Elan Financial provides and administers its credit card services and related infrastructure on behalf of and for the benefit of Defendants and their customers. Via

Comerica Inc.’s own activities and via at least these entities, Comerica Inc. has substantial business operations in Texas, which include retail and non-profit partners, clients, customers and related financial products and services, such as retail banking services, investment services, and Comerica-branded cards. Comerica Inc. has placed and continues to place infringing products, services, and methods for offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via credit and debit cards and associated bank accounts, including related mobile, contactless, and online payment systems, into the U.S. stream of commerce. Comerica Inc. has placed such products, services, and methods into the stream of commerce with the knowledge and understanding that such products are, will be, and continue to be sold, offered for sale, and/or used in this District and the State of Texas. *See Litecubes, LLC v. Northern Light Products, Inc.*, 523 F.3d 1353, 1369-70 (Fed. Cir. 2008) (“[T]he sale [for purposes of § 271] occurred at the location of the buyer.”).

13. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(c) and 1400(b). As alleged herein, Defendant Comerica Inc. has committed acts of infringement in this District. As further alleged herein, Defendant Comerica Inc., via its own operations and employees located there and via the presence of other subsidiaries as agents and/or alter egos of Defendant Comerica Inc., has a regular and established place of business, in this District at least at a bank branch location located at 3310 Premier Dr. Plano, TX 75023, among other properties in this District, found at <https://locations.comerica.com/>. According to property search records for Collin County, Comerica Inc. is the listed owner of the Comerica Premier branch location. *See Property Search*, COLLIN CENTRAL APPRAISAL DISTRICT, <https://www.collincad.org/propertysearch> (use Advanced Search form to search for “Comerica” as owner) (last visited February 11, 2022). Accordingly, Comerica Inc. may be sued in this district under 28 U.S.C. § 1400(b).

B. Defendant Comerica Bank

14. On information and belief, Defendant Comerica Bank is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this State and this District, including: (A) at least part of its infringing activities alleged herein which purposefully avail the Defendant of the privilege of conducting those activities in this state and this District and, thus, submits itself to the jurisdiction of this court; and (B) regularly doing or soliciting business, engaging in other persistent conduct targeting residents of Texas and this District, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported and services provided to and targeting Texas residents and residents of this District vicariously through and/or in concert with its alter egos, suppliers, intermediaries, partners, agents, distributors, importers, customers, subsidiaries, and/or consumers, including but not limited to its parent Comerica Inc. and Elan Financial.

15. Comerica Bank, including as an agent and alter ego of parent company Comerica Inc., owns and maintains a retail banking business that provides products, services, and methods that include Comerica Bank offering, providing, registering, facilitating, maintaining, transacting, authenticating, and processing banking, credit card, and debit card account services, via credit and debit cards and associated banking accounts, including related mobile, contactless, and online payment systems, for Comerica's customers, consumers, and clients in Texas and this District. Moreover, Comerica Bank identifies itself, including via branding, as the Comerica entity that provides Comerica credit and debit cards to Comerica's clients, consumers, and customers. *See, e.g., Comerica Credit Cards, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/comerica-credit-card.html>* (identifying credit card products provided by Comerica Bank) (last visited February 22, 2022).

16. Moreover, Comerica Bank owns, directs, and/or controls subsidiaries, partners, and affiliates that have a significant business presence in the U.S. and in Texas. *See, e.g., Subsidiaries*, COMERICA, <https://www.comerica.com/about-us/company-overview/company-information/subsidiaries.html> (last visited June 14, 2021). On information and belief, Comerica Bank controls or otherwise directs and authorizes all activities of its alter egos, suppliers, intermediaries, agents, subsidiaries, and affiliates, including, but not limited to, Elan Financial, which at least has offices in Irving, Texas from which, on information and belief, it provides and administers its credit card services to Defendants and their customers. Via Comerica Banks's own activities and via at least these entities, Comerica Bank has substantial business operations in Texas, which include retail and non-profit partners, clients, customers and related financial products and services, such as retail banking services, investment services, and Comerica-branded cards. Comerica Bank has placed and continues to place infringing products, services, and methods for offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via credit and debit cards and associated bank accounts, including related mobile, contactless, and online payment systems, into the U.S. stream of commerce. Comerica Bank has placed such products, services, and methods into the stream of commerce with the knowledge and understanding that such products are, will be, and continue to be sold, offered for sale, and/or used in this District and the State of Texas. *See Litecubes.*, 523 F.3d at 1369-70 (“[T]he sale [for purposes of § 271] occurred at the location of the buyer.”).

17. Such a corporate and commercial presence in Texas, including in this District, by Defendant Comerica Bank furthers the development, design, manufacture, distribution, sale, and use of Comerica Bank's infringing products, services, and methods for offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial

transactions via credit and debit cards and associated accounts. Through direction and control of its alter egos, suppliers, intermediaries, agents, subsidiaries and affiliates, including but not limited to direction and control of and partnership with Elan Financial, Comerica Bank has committed acts of direct and/or indirect patent infringement within Texas this District, and elsewhere in the United States. Such acts give rise to this action and/or have established minimum contacts with Texas such that personal jurisdiction over Comerica Bank would not offend traditional notions of fair play and substantial justice.

18. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(c) and 1400(b). Defendant Comerica Bank has committed acts of infringement in this District. As further alleged herein, Defendant Comerica Bank, via its own operations and employees located there and the presence of other subsidiaries as agents and/or alter egos of Comerica Inc., has a regular and established place of business in this District at least at 8422 Dallas Pkwy, Frisco, TX 75034, among other properties found at <https://locations.comerica.com/>. According to property search records for Collin County, Comerica Bank is the listed owner of this Frisco branch location, among other locations in this District. *See Property Search*, COLLIN CENTRAL APPRAISAL DISTRICT, <https://www.collincad.org/propertysearch> (use Advanced Search form to search for “Comerica” as owner) (last visited February 11, 2022). Accordingly, Comerica Bank may be sued in this district under 28 U.S.C. § 1400(b).

19. On information and belief, Defendants Comerica Inc. and Comerica Bank each have significant ties to, and presence in, the State of Texas and this District making venue in this District both proper and convenient for this action.

THE ASSERTED PATENTS AND TECHNOLOGY

20. The Asserted Patents cover various aspects of products, services, and methods that include the Comerica Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card accounts and related products and services for Comerica's customers, consumers, and clients, including Comerica's internal payment processing, authentication, authorization, overdraft, and fraud detection systems and methods, referred to herein collectively as the "Accused Instrumentalities." The apparatuses, systems, and methods described in each of the Asserted Patents apply, for example, to systems for securing, authorizing, and facilitating financial transactions, i.e., purchases related to banking, credit, and debit card accounts.

21. On information and belief, a significant portion of the operating revenue of the Comerica Defendants is derived from offering and selling products, services, and methods related to issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing credit card and debit card accounts, and related financial benefits of, including fees and interest, for Comerica's customers, consumers, and clients. Comerica's noninterest income in 2020 was \$1.0 billion U.S. dollars. *See 2020 Annual Report*, at 47.

22. The Asserted Patents cover Accused Instrumentalities of the Comerica Defendants that secure, authorize, and facilitate mobile payments, contactless payments, and online payments using credit and debit card accounts activated, offered, issued, provided, established, registered, facilitated, and maintained by Comerica, including by the Comerica Defendants and vicariously through their alter egos, suppliers, intermediaries, agents, distributors, partners, subsidiaries, and clients, including Elan Financial. Clients, customers, and consumers of the Accused Instrumentalities use such products at the point of sale, for example, via mobile wallets provided

on a mobile device with the appropriate smartcard and/or app installed (and in some cases, the software is native to the device) or via an embedded chip or smartcard embedded within a physical credit or debit card. In other instances, the Accused Instrumentalities may be utilized in online purchases conducted over a network (e.g., the Internet) and/or when the user of the payment card account is registering, activating, or maintaining the account.


23. To the extent the Comerica Defendants contract with Elan Financial to handle certain aspects of the credit card accounts and transactions, the Comerica Defendants exert control over those accounts and transactions. Via these contractual obligations, the Comerica Defendants, as a single entity, direct and control the acts of Elan Financial to perform one or more steps of the inventions claimed in the '671 patent, the '509 patent, the '369 patent, and the '985 patent. Moreover, the Comerica Defendants infringe vicariously by profiting from the activities of Elan Financial such that Elan Financial's activities are attributable to the Comerica Defendants, making them chargeable with direct infringement.

24. On information and belief, the Comerica Defendants contract and partner with third-party Elan Financial which provides credit card services on behalf of and for the benefit of Comerica and its customers. The Comerica Defendants identify Elan Financial as the "creditor and issuer of these credit cards offered by Comerica." *See, e.g., Comerica Credit Cards*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/comerica-credit-card.html> at FN1 (last visited March 10, 2022).

25. On information and belief, Elan Financial is a division of U.S. Bank National Association, whose parent is U.S. Bancorp (collectively referred to as "U.S. Bank"). Elan Financial is a credit card issuer that contracts with and partners with banks and credit unions by providing credit card services and related infrastructure necessary for those banks and credit unions, including

the Comerica Defendants, to serve their customers. For example, Elan Financial states on its website that “we have the products and industry know-how to help your organization optimize its payment program” and also touts its “Proven Commitment. Trusted Partnership. *Elan has the knowledge and experience to customize your payment program the way you want it.*” See *Elan Financial Services*, ELAN, <https://www.elanpaymentsolutions.com/index.html> (emphasis in original) (last visited March 10, 2022). Furthermore, news releases from U.S. Bank provide the following as an example of the types of relationships Elan Financial has with banking institutions: “Elan Financial Services has entered into a strategic partnership with Cleveland-based KeyBank to offer Key clients a full suite of credit card products and services.” See, e.g., *News Releases*, U.S. BANCORP, <https://ir.usbank.com/news-releases/news-release-details/keybank-partners-elan-financial-services-its-credit-card-issuing> (last visited March 8, 2022). Thus, Elan Financial enters into “strategic partnerships” with banks, including the Comerica Defendants” to provide “customize[d]” payment solutions including “credit card products and services.”

26. On information and belief, Comerica’s credit and debit card account services utilize the Europay, Mastercard, and Visa (EMV) standards in processing, securing, and authenticating financial transactions. For example, the Comerica Defendants provide payment applications (often provisioned to a Secure Element) that use EMV standards to process payments. In some cases, the Comerica Defendants’ payment applications reside on a user’s mobile device (e.g., stored in a Secure Element or other secure memory), allowing the user to make payments via a Comerica credit or debit card without presenting the physical card at the time of payment (referred to herein as a “mobile payment”). Comerica’s mobile payments can be facilitated by using mobile wallets such as Google Pay and Samsung Pay, such as shown below:

<p>In-store purchases:</p> <p>Stop fumbling for your wallet. Pay with your mobile device wherever you see the contactless payment symbol at checkout.</p>  <p>Select your mobile wallet below to learn how to add your Comerica credit or debit card, and change the way you pay today!</p> <p>Click a logo below to learn more.</p>	<p>Online and in-app purchases:</p> <p>Rather than entering your credit or debit card number and address details, select your mobile wallet where accepted when shopping online and in-app to save time.</p>
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See *Mobile Wallets*, COMERICA, <https://www.comerica.com/personal-finance/banking/online-services/mobile-wallet.html> (last visited Feb. 22, 2022).

27. Mobile wallets may be implemented as an application (or “app”) on a mobile device, e.g., a mobile phone, tablet, or smartwatch. In some implementations, mobile wallets utilize Host Card Emulation, where, instead of storing the Comerica’s payment application in a Secure Element on the host device, it is stored in the host CPU or remotely, e.g., in the cloud. In either case, mobile payments are made wirelessly, without contact needed between payment device and payment terminal, via, for example, Near Field Communication (“NFC”) protocols or Magnetic Secure Transmission (MST), as explained below. A user holds the mobile device close to the payment terminal in order to establish communication between the payment application and the payment terminal. These wireless methods utilized with EMV deliver secure transactions between a payment terminal and the mobile device.

EMV

EMV stands for Europay, MasterCard, and Visa. It's the technical standard for payments using Smart Cards which are cards with an embedded chip. These cards can be contact cards that need to be inserted in a terminal or contactless cards that can be read using NFC technology. Google Pay payments are presented to the payment terminal as EMV contactless payments.

<https://support.google.com/pay/merchants/answer/7151369?hl=en>

Field Communication (NFC) and Magnetic Secure Transmission (MST). MST is Samsung's innovative technology that delivers secure transactions for new EMV chip and NFC terminals, as well as traditional, magnetic strip terminals, enabling consumers to use

<https://news.samsung.com/us/samsung-pay-partners-global-pos-providers-accelerate-mobile-payments-adoption/>

28. On information and belief, as indicated below, Comerica encourages its clients, consumers, and customers to shop with its Comerica-branded credit and debit cards using a digital wallet service that provides a distribution channel by which Comerica's payment applications (e.g., via the Secure Element on the mobile device) can be accessed and used.

Your mobile device, your mobile wallet


Pay with your Comerica debit or credit card using your preferred mobile wallet.

With a simple tap, click or touch, you can shop with ease in-store, online, and in-app.

See *Mobile Wallets*, COMERICA, <https://www.comerica.com/personal-finance/banking/online-services/mobile-wallet.html> (last visited Feb. 22, 2022).

29. The Accused Instrumentalities also include at least Defendants' payment card (e.g., credit card and debit card) related products, services, and methods for card payments using a physical credit card having an embedded chip or smartcard. See, e.g., *Put flexibility at your fingertips*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/debit-atm.html>

(last visited February 22, 2022) (listing Comerica's debit cards); *Comerica Credit Cards*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/comerica-credit-card.html> (identifying credit card products provided by Comerica Bank) (last visited February 11, 2022) (listing Comerica's credit cards). For example, the Comerica Defendants' payment applications reside on microchips embedded on Comerica's credit and debit cards, which allow the user to tap the payment card to a reader and complete a transaction wirelessly without contact between the card's magnetic stripe and the reader.

30. On information and belief, the Accused Instrumentalities include at least Defendants' payment card (e.g., credit card and debit card) related products, services, and methods for contactless payments using a physical credit card having an embedded chip or smartcard that utilize EMV standards for contactless payment. *See, e.g., Comerica Credit Cards*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/comerica-credit-card.html> (identifying credit card products provided by Comerica Bank) (last visited February 11, 2022). These credit and debit cards include EMV compliant contactless payment functionality indicated by the "Contactless Indicator"  which appears prominently on the cards.


Visa® Platinum Card



Visa® Max Cash Preferred Card



See *Comerica Credit Cards*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/comerica-credit-card.html> (identifying credit card products provided by Comerica Bank) (last visited February 11, 2022).

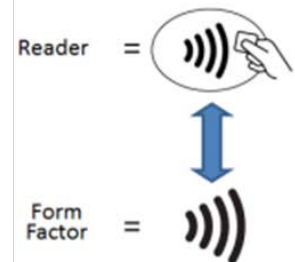
31. The Contactless Indicator “represents compatibility with a Point of Sale (POS) terminal or reader which is compliant with the EMV Contactless Communication Protocol” and in payment-related environments consumers may use their compliant card or device on a POS terminal or reader bearing the “Contactless Symbol”  as explained below.

Using the Contactless Indicator and Contactless Symbol together in Traditional Payment Environments

The Contactless Indicator may be used for transactions beyond payments on consumer-held form factors (card, key fob, mobile device) or a contactless reader, terminal, or other “point of transaction” device.

When shown on a traditional bank card or equivalent payment-related form factors, the Contactless Indicator represents compatibility with a Point of Sale (POS) terminal or reader which is compliant with the EMV Contactless Communication Protocol.

Payment-related transaction environments use the Contactless Symbol on POS terminal or reader.



<https://www.emvco.com/wp-content/uploads/2020/02/EMVCo-Contactless-Indicator-Reproduction-Requirements-Nov-2019.pdf>

32. On information and belief, a process referred to as “tokenization,” which is also part of the EMV standards, is also utilized by the Comerica Defendants in authorizing credit and debit transactions, via online payments, in-app payments, and mobile payments. As explained below, a “payment token” is a “surrogate value for a PAN” (a primary account number). In tokenization, “Payment Tokens are requested, generated, issued, provisioned, and processed as a surrogate for PANs.”

Payment Token	A surrogate value for a PAN that is a variable length, ISO/IEC 7812-compliant numeric issued from a designated Token BIN or Token BIN Range and flagged accordingly in all appropriate BIN tables. A Payment Token must pass basic validation rules of a PAN, including the Luhn check digit. Payment Tokens must not collide or conflict with a PAN.
Payment Tokenisation	A specific form of tokenisation whereby Payment Tokens are requested, generated, issued, provisioned, and processed as a surrogate for PANs as described by the processes defined in this technical framework.

<https://www.emvco.com/wp-content/plugins/pmpo-customizations/oy-getfile.php?u=/wp-content/uploads/documents/EMVCo-Payment-Tokenisation-Specification-Technical-Framework-v2.0.pdf>

33. Via mobile wallet applications, such as Google Pay, tokenization is implemented by the Comerica Defendants assigning a “virtual account number” or token that “securely links the actual card number to a virtual card on the user’s Google Pay-enabled device.”

Tokenization

Google Pay facilitates the assignment of a “virtual account number,” also called a token, that securely links the actual card number to a virtual card on the user’s Google Pay-enabled device. A token is unique to the card number it represents. The app user’s mobile device keeps an encryption key in memory that it uses to decrypt limited-use and single-use keys (also called cryptograms) for contactless transactions (NFC payments).

<https://support.google.com/pay/merchants/answer/7151299?hl=en>

34. The Comerica Defendants, as a payment card account issuer, including through their strategic partnership with Elan Financial, direct and control the operation of mobile wallets and contactless payments utilizing microchips or smartcards embedded within the physical credit or debit card. As described below with respect to the mobile wallet Google Pay, for example, the

Comerica Defendants provision third-party mobile wallets with the Comerica Defendants' own credentials and EMV payment applications.

(c) GPC's Role. While Google Pay enables you to store your Payment Instruments and transmit their information to merchants or transit providers, neither GPC nor Google processes Google Pay transactions with such Payment Instruments, and neither exercises control over: the availability or accuracy of payment cards, payments, refunds, chargebacks; the provisioning (or addition) of cards to Google Pay; or other commercial activity relating to your use of Google Pay. For any concerns relating to the foregoing, please contact your Payment Instrument's issuer. You acknowledge and agree that your transactions through Google Pay are transactions between you and the merchant and not with GPC, Google, or any of their affiliates. For disputes relating to payment transactions conducted using Google Pay, contact your Payment Instrument's issuer or the appropriate merchant. Neither GPC nor Google is a party to your registered Payment Instruments' cardholder agreements or other terms of use, and neither is involved in issuing credit or determining eligibility for credit. GPC does not make any representation or verify that any of your Payment Instruments are in good standing or that the issuer of your Payment Instrument will authorize or approve any transaction with a merchant or transit provider when you use Google Pay in connection with that transaction.

https://payments.google.com/payments/apis-secure/u/0/get_legal_document?ldo=0&ldt=googlepaytos&ldl=und#SafeHtmlFilter_US

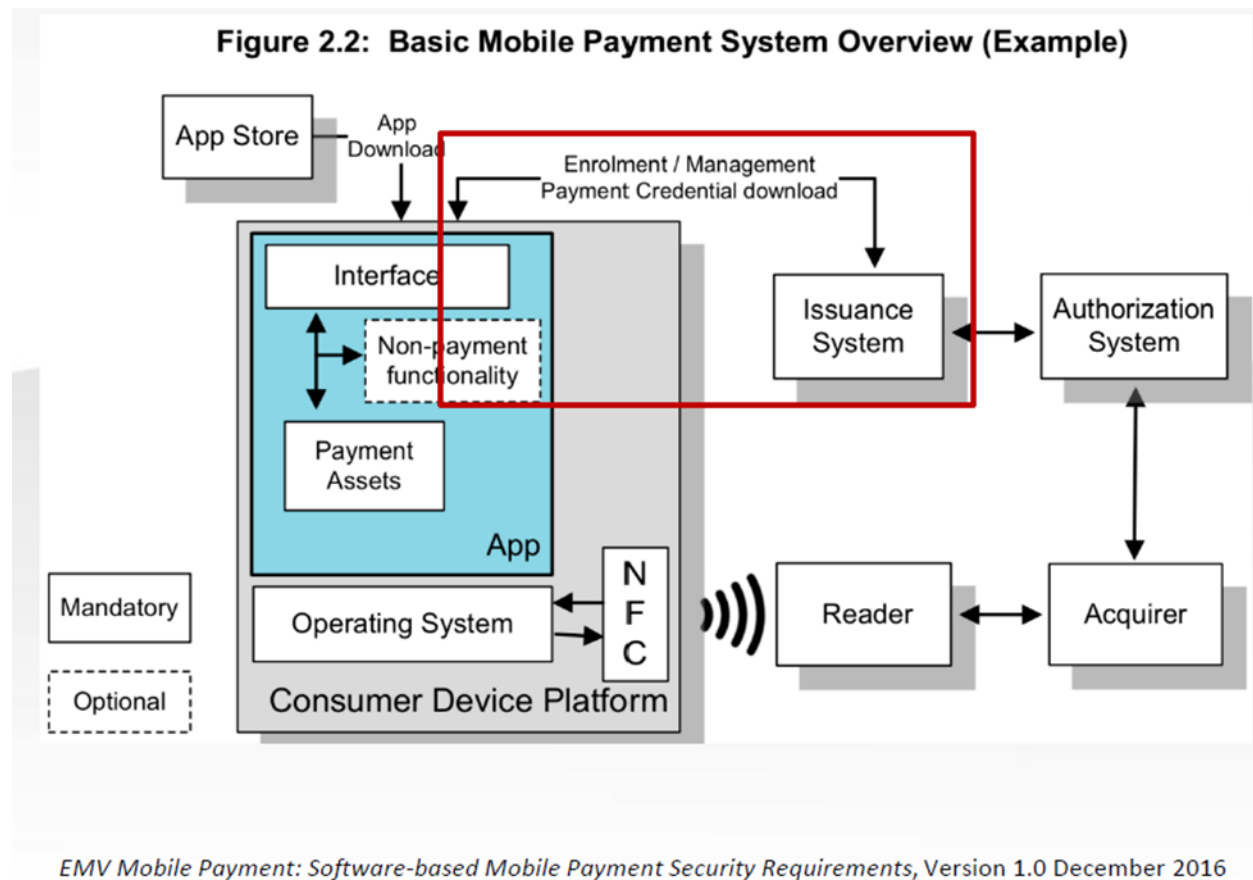
35. The Accused Instrumentalities include Comerica's products, processes, and systems offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing bank accounts, credit card, and debit card accounts and related products and services for Comerica's customers, consumers, and clients, including Comerica's internal payment processing, authentication, authorization, overdraft, and fraud detection systems and methods, related to at least the following Comerica payment cards. Visa Platinum Card, Visa Max Cash Preferred Card, Visa® Everyday Rewards+ Card, Visa® Max Cash Secured Card, Visa® Secured Card, Visa® College Real Rewards Card, Mastercard® Business Cash Preferred Card, Mastercard® Business Real Rewards Card, Mastercard® Smart Business Rewards Card, Mastercard® Business Platinum Card, The Comerica Debit Mastercard, The Comerica ATM Card, and Comerica Debit Mastercard® Business Card®. *See, e.g., Mobile Wallets, COMERICA, https://www.comerica.com/personal-*

finance/banking/online-services/mobile-wallet.html (“Use your Comerica debit and credit card on ... Samsung Pay and Google Pay™ to make checkouts at your favorite retailers convenient, fast, and secure. Pay confidently from your mobile device knowing that the same fraud protection Comerica gives your credit and debit card carries over to your mobile wallet.”) (last visited February 23, 2022). The Accused Instrumentalities further include systems and methods related to Comerica’s overdraft and fraud protection services, including those associated with authentication of user logins and user self-auditing of privacy data related to checking, savings, and other banking accounts. Such services are offered to users via at least Comerica’s Online Services, including Web Banking, Web Bill Pay, and Mobile Banking services (e.g., available via [comerica.com](https://www.comerica.com)). *See Online Services for Small Business, COMERICA*, <https://www.comerica.com/business/banking/cards-online-sevices/online-services.html> (last accessed February 23, 2022).

36. The Accused Instrumentalities of the Comerica Defendants infringe at least claims of the ’671 patent, which provide technological solutions and improvements addressing security concerns surrounding the provisioning of credentials to, and transactions performed using, digital wallets. Though conventional methods for securing financial transactions utilized use of personal identifiers, such as PINs, such identifiers could be easily duplicated or discovered. Even with the use of electronic wallets and more intelligent instruments, there remained a need to further safeguard electronic transactions against evolving threats. In at least one exemplary embodiment, the ’671 patent addresses the need for securing RFID transactions by establishing a challenge from a computer-based system sent to an intelligent token of a client. The token generates a challenge response that is received by the computer-based system. Credentials, assembled by the computer-based system, include a key. In a given transaction, a client may make a request to the computer-based system including at least a portion of the assembled credentials. The computer-based system

may validate the portion of the assembled credentials with the key and provide access to a transaction service. Utilizing systems and methods such as these, the '671 patent's claims allow payment card issuers to secure direct and safe transactions between consumers and merchants.

37. The Comerica Defendants infringe the '671 patent via Comerica's computer-based systems that conduct user enrollment processes for credit card and debit card mobile wallet payments. Such systems of Comerica infringe the '671 patent by enabling and conducting mobile payments that utilize mobile wallets, such as Google Pay and Samsung Pay. These mobile wallets conform to EMV standards. As part of utilizing a consumer's mobile wallet, the Comerica Defendants conduct an enrollment process, which forwards a challenge to a consumer's mobile device, i.e., an intelligent token, as shown below.



38. As described below, the challenge is used in the enrollment process for identification and verification of the consumer, as a user of the mobile wallet, and for device attestation to determine that the device is in a trusted state. Furthermore, the Comerica Defendants receive this challenge response.

3.3 User Enrolment

User enrolment enables the cardholder to request the registration of their Software Card. It is an important life cycle event, normally conducted remotely (e.g. OTA), at the time a consumer wishes to enrol a payment card to the Mobile Application. Some Identification and Verification (ID&V) considerations that need to be taken into account are:

- There must be defined and established Identification and Verification (ID&V) requirements to be used during the user enrolment process.
- The user enrolment process must verify through remote device attestation whether the device is in a trusted state before releasing protected data to or storing private information on the Consumer Device.

EMV Mobile Payment: Software-based Mobile Payment Security Requirements, Version 1.0 December 2016

39. The Comerica Defendants further assemble credentials, including encryption keys, to be used when effecting transactions, referred to as “provisioning” below.

Data Preparation

Data preparation is the process that creates the data that is to be placed in an IC card application during card personalization. Some of the data created may be the same across all cards in a batch; other data may vary by card. Some data, such as keys, may be secret and may need to be encrypted at all times during the personalization process.

2.1.1 Issuer Master Keys and Data

EMV personalization cannot take place unless the card issuer creates master keys and other specific data. The master keys are used in two ways, firstly to support secure transmission of personalization data and secondly to create application-level data for personalization of an EMV application. Some of the data may be used to manage the personalization process and some will be placed on the card during personalization.

EMV Card Personalization Specification, Version 1.1 July 2007

40. In a given transaction, the Comerica Defendants receive a request from the consumer’s mobile wallet, which includes the assembled credentials, such as the application primary account number (PAN or also token) and an Application Cryptogram, which is encrypted

with the provided key. As described below, the Comerica Defendants validate the consumer's credentials using the provided key.

Table 10 contains existing data elements necessary for an ICC transaction.

Data Element	Condition
Acquirer Identifier	Present for Terminal Type = '1x' or '2x' if Merchant Identifier or Terminal Identifier does not implicitly refer to a single acquirer
Amount, Authorised * 12	
Amount, Other *	Present if cashback used for current transaction
Application Effective Date	Present if in ICC
Application Expiration Date	Present if not in Track 2 Equivalent Data
Application PAN *	Present if not in Track 2 Equivalent Data
Application PAN Sequence Number *	Present if in ICC
Enciphered PIN Data	Present if CVM performed is 'enciphered PIN for online verification'
Merchant Category Code	Present for Terminal Type = '2x' if Merchant Identifier or Terminal Identifier does not implicitly refer to a single merchant category

https://www.emvco.com/wp-content/uploads/2017/05/EMV_v4.3_Book_4_Other_Interfaces_20120607062305603.pdf

8.1.2 Application Cryptogram Algorithm

The method for Application Cryptogram generation takes as input a unique ICC Application Cryptogram Master Key MK_{AC} and the data selected as described in section 8.1.1, and computes the 8-byte Application Cryptogram in the following two steps:

https://www.emvco.com/wp-content/uploads/2017/05/EMV_v4.3_Book_2_Security_and_Key_Management_20120607061923900.pdf

41. Once the mobile wallet is validated, as described below, the transaction is allowed to proceed.

be useful for clarity. The ARQC is a cryptogram generated by the card from transaction data using an issuer key stored in the card and known at the issuer authorisation system. The issuer uses this key to authenticate the ARQC and thereby authenticate the card. This process is termed 'online card authentication' or simply 'card authentication'.

EMV Integrated Circuit Card Specifications for Payment Systems: Book 3, Application Specification, Version 4.3, November 2011

42. The Accused Instrumentalities of the Comerica Defendants infringe at least the claims of the '509 patent, which provide technological solutions and improvements for facilitating payment transactions. Conventional methods for payment transactions, particularly RFID transactions, had problems supporting multiple payment systems. The '509 patent discloses a computer-based system that queries a payment system directory and selects the appropriate payment system. The directory may contain algorithms or rules to allow the selection of a payment system based upon payment information, the type of transaction, or the transaction instrument issuer. Payment information may include a proxy account number. Once the payment system is selected, an authorization request with payment information is sent to the payment system. Payment authorization is received by the computer-based system. Systems and methods of the '509 patent, such as these, allow a payment system directory to identify a payment system that is mutually supported and appropriate for a particular transaction.

43. The Comerica Defendants infringe the '509 patent via their computer-based systems for credit card and debit card transaction processing, including a Comerica EMV payment application issued to a user and stored in a mobile wallet. In response to a command from a point-of-sale terminal, Comerica Defendants, via a computer-based system that operates the payment application provisioned by the Comerica Defendants, query an onboard payment system directory, as indicated below.

The basic functions of the POS System include:

- communication with contactless cards
- application selection and kernel activation

5.8.2 Application Selection and Kernel Activation

The selection mechanism is designed around the use of a PPSE. For multi-brand acceptance, this allows Entry Point to obtain all the available brands and applications with a single command and to make an immediate choice based on priority and kernel availability.

A PPSE response returned by a card contains one or more File Control Information (FCI) data elements forming a list of products supported by the card, the kernel they will run with, and their priority relative to one another.

Entry Point compares the ADF Names and Kernel Identifiers with the transaction type specific set of Combinations of AIDs and kernels that it supports for the given transaction type. The result is a list of Combinations, prioritised according to priority value or (for equal priority matches) by their order in the FCI list. AIDs and ADF Names can be obtained from the relevant payment system.

In the final selection, Entry Point picks the Combination with the highest priority, sends the SELECT AID command with the AID of this Combination, and hands over processing to the selected kernel. The Entry Point Pre-Processing Indicators for the relevant Combination are made available to the selected kernel.

https://www.emvco.com/wp-content/uploads/2017/05/Book_A_Architecture_and_General_Rqmts_v2_6_Final_20160422011856105.pdf

44. The Comerica Defendants' card application stored in a mobile wallet, for example, provides an identification of each supported candidate payment system. A candidate payment system is located for processing a transaction and receives payment information related to the transaction to develop a payment authorization.

5.8.2 Application Selection and Kernel Activation

The selection mechanism is designed around the use of a PPSE. For multi-brand acceptance, this allows Entry Point to obtain all the available brands and applications with a single command and to make an immediate choice based on priority and kernel availability.

A PPSE response returned by a card contains one or more File Control Information (FCI) data elements forming a list of products supported by the card, the kernel they will run with, and their priority relative to one another.

Proximity Payment System Environment (PPSE)	A list of all Combinations supported by the contactless card. PPSE is used in the Entry Point Combination Selection process.
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https://www.emvco.com/wp-content/uploads/2017/05/Book_A_Architecture_and_General_Rqmts_v2_6_Final_20160422011856105.pdf

47. The Comerica Defendants' card application stored in a mobile wallet transmits a payment authorization request, related to the transaction, through the payment system for processing. As indicated below, the card application receives the issuer authorization through the payment system.

5.4 Generate AC

5.4.1 Definition and Scope

The GENERATE AC command sends transaction-related data to the Card, which then computes and returns an *Application Cryptogram*. Depending on the risk management in the Card, the cryptogram returned by the Card may differ from that requested in the command message. The Card may return an AAC (transaction declined), an ARQC (online authorization request), or a TC (transaction approved).

https://www.emvco.com/wp-content/plugins/pmpro-customizations/ov-getfile.php?u=/wp-content/uploads/documents/C-2_Kernel_2_V_2_7_Final.pdf

48. The Accused Instrumentalities of the Comerica Defendants infringe at least the claims of the '369 patent, which provide technological solutions and improvements for facilitating payment transactions. Conventional methods for payment transactions, particularly RFID transactions, had problems supporting multiple payment systems. The '369 patent provides systems and methods that can be used by smartcards, including contactless credit and debit cards and mobile wallets. The smartcard receives a payment request for a transaction. The smartcard determines a first payment system for processing the transaction, where such determination includes a query for payment directory information stored on the smartcard. The smartcard transmits to a point-of-sale device (POS) an identification of the payment system. Systems and methods of the '369 patent, such as these, allow a payment system directory to identify a payment system that is mutually supported and appropriate for a particular transaction.

49. The Comerica Defendants infringe the '369 patent via their computer-based systems for credit card and debit card transaction processing, including Comerica's EMV payment

application issued to a user and stored in a smartcard (e.g., a mobile wallet or contactless card). The Comerica Defendants provide contactless credit and debit cards and mobile wallet payment applications configured with smartcards that receive payment requests from POS terminals. For example, in a Kernel 2 application (i.e., a MasterCard transaction) a card responds to an Application Cryptogram (AC) command from the terminal, as indicated below.

3.4.3 EMV Mode

For an EMV mode transaction, after the GET PROCESSING OPTIONS command, the Kernel continues with the following steps:

1. It determines which form of Offline Data Authentication to perform.
2. It reads the data records of the Card (using READ RECORD commands). If the same transaction involving the same Card is recognized in the Kernel's internal log of torn transactions, then an attempt is made to recover the transaction – see section 3.7.
3. It performs Terminal Risk Management and Terminal Action Analysis, and selects a cardholder verification method for the transaction.
4. It requests an Application Cryptogram from the Card by issuing a GENERATE AC command. If a response is not received from the Card, the Kernel considers the transaction as "torn", and stores the transaction details in its internal log of torn transactions, before terminating – see section 3.7.
5. It performs Offline Data Authentication as appropriate.

https://www.emvco.com/wp-content/plugins/pmpo-customizations/oy-getfile.php?u=/wp-content/uploads/documents/C-2_Kernel_2_V_2_7_Final.pdf

50. The smartcard provided by Comerica Defendants in contactless cards and mobile wallets query a payment system directory in response to a command from the POS terminal. The contactless card or mobile wallet, via the smartcard, will transmit an identification of each supported payment system. The identification is usable by the POS terminal. As shown below, a POS device may support one or more applications (payment systems), where each payment system is associated

with an Application Identifier (AID), e.g., Visa AIDs are routed through VisaNet—the payment system.

2.2.1 Visa U.S. Common Debit AID and Customized Application Selection

All transactions initiated with a Visa owned Application Identifier (AID) other than the Visa U.S. Common Debit AID must be routed to VisaNet and be processed according to Visa or Visa Interlink (as applicable) network operating rules and technical standards. Some products may be personalized with more than one AID, where one or more AIDs may represent products with their own routing option(s), for instance the Visa U.S. Common Debit AID. To initiate a transaction using such an AID, certain terminal logic may need to be executed as part of the outlined VSDC transaction flow. This logic is described in Section 4.4.3.

<https://www.visa.com/chip/merchants/grow-your-business/payment-technologies/credit-card-chip/docs/visa-emv-merchant-aig.pdf>

51. The Accused Instrumentalities of the Comerica Defendants infringe at least the claims of the '985 patent, which provide methods and systems for authorizing payment transactions for customers with more than one transaction instrument representing a single transaction account. In the '985 patent, customer-level transaction data may be determined to be common to more than one instrument, and such data may be analyzed in order to authorize a payment transaction. Data elements may be verified across multiple records for an individual customer. One advantage of such verification is that it improves the accuracy of transaction risk calculations, for example, by reducing the probability of errors during fraud detection. Other advantages include providing merchants with comparison results at the data element level to assist in a decision-making process. In at least one exemplary embodiment of the '985 patent, a computer system may receive an authorization request from a merchant for a transaction. Such transaction may be initiated by using a transaction instrument corresponding to a user. The computer system may determine a second transaction instrument corresponding to the user. To authorize the transaction, the computer system may analyze transaction data that corresponds to transaction data associated with the second transaction. The '985 patent allows for increased security and confidence during a transaction and

reduces the number of incorrectly declined transactions due to authorization errors as well as providing an increase in customer satisfaction.

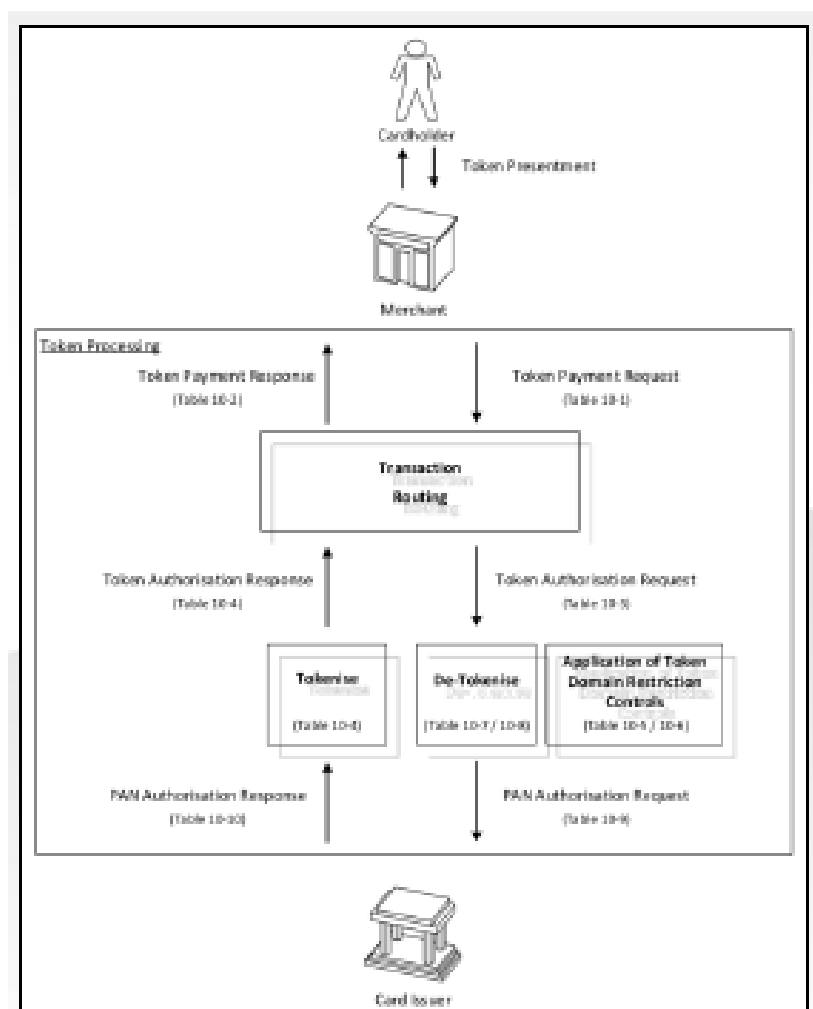
52. The Comerica Defendants infringe the '985 patent via their computer-based systems for credit card and debit card transaction processing, including their systems and processes for authorization of tokenized payment requests. Such systems infringe the '985 patent by enabling and conducting mobile payments that use the Comerica Defendants' EMV payment applications in conjunction with mobile wallets, such as Google Pay and Samsung Pay. The Comerica Defendants create virtual account numbers, referred to as tokens in the mobile wallet context, for provisioning to mobile wallets and initiating payment card transactions. Comerica credit card transactions made online by consumers may also utilize virtual account numbers via "tokenization," as shown below in relation to Google Pay.

Tokenization

Google Pay facilitates the assignment of a "virtual account number," also called a **token**, that securely links the actual card number to a virtual card on the user's Google Pay-enabled device. A token is unique to the card number it represents. The app user's mobile device keeps an encryption key in memory that it uses to decrypt limited-use and single-use keys (also called cryptograms) for contactless transactions (**NFC** payments).

<https://support.google.com/pay/merchants/answer/7151299?hl=en>

53. As shown below, tokenized account numbers (i.e., a first transaction instrument) are sent to the Comerica Defendants for de-tokenization and authorization.



Token Payment Request: includes the request that originates from the point of interaction with the Merchant (such as a Terminal, website or application) and the response that provides the results of the authorisation decision

EMV Payment Tokenisation Specification, Technical Framework v2.0, September 2017

54. As explained below, upon receipt of a Payment Token, the Comerica Defendants convert the token into the corresponding Comerica account number (PAN) of the user.

Payment Token	<p>An existing payment processing field that is passed through the authorisation, capture, clearing, and exception messages in place of the PAN.</p> <p>After De-Tokenisation, the Payment Token is replaced with the underlying PAN. The PAN is then passed to the Card Issuer as part of the PAN Authorisation in this field.</p> <p>The Payment Token may optionally be passed to the Card Issuer as part of the PAN Authorisation using a Payment Network specific Token Processing field.</p>
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<p>De-Tokenisation: includes the request and corresponding response processing converting a Payment Token and Token Expiry Date to an underlying PAN and PAN Expiry Date. De-Tokenisation may or may not include the application of Token Domain Restriction Controls</p>

EMV Payment Tokenisation Specification, Technical Framework v2.0, September 2017

55. The Comerica Defendants analyze the transaction data to authenticate the transaction, as explained below in relation to an EMV-type transaction.

be useful for clarity. The ARQC is a cryptogram generated by the card from transaction data using an issuer key stored in the card and known at the issuer authorisation system. The issuer uses this key to authenticate the ARQC and thereby authenticate the card. This process is termed 'online card authentication' or simply 'card authentication'.

EMV Integrated Circuit Card Specifications for Payment Systems: Book 3, Application Specification, Version 4.3, November 2011

https://www.emvco.com/wp-content/uploads/2017/05/EMV_v4.3_Book_2_Security_and_Key_Management_20120607061923900.pdf

56. Based on the analysis for authentication, the Comerica Defendants respond to the authorization request with an authorization message.

10.9 Online Processing

Purpose:

Online processing is performed to ensure that the issuer can review and authorise or reject transactions that are outside acceptable limits of risk defined by the issuer, the payment system, or the acquirer.

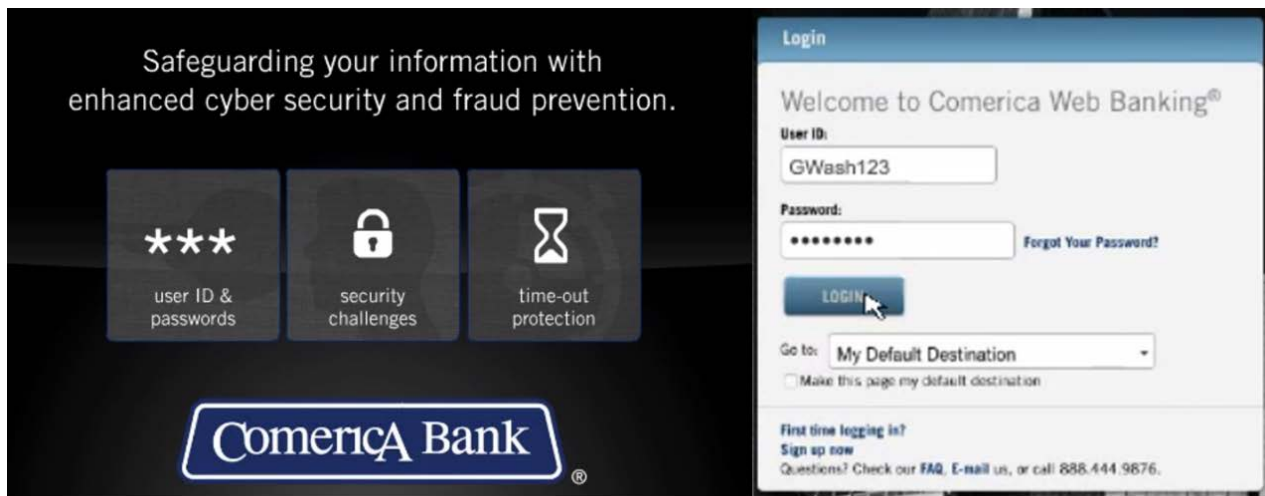
be useful for clarity. The ARQC is a cryptogram generated by the card from transaction data using an issuer key stored in the card and known at the issuer authorisation system. The issuer uses this key to authenticate the ARQC and thereby authenticate the card. This process is termed 'online card authentication' or simply 'card authentication'.

EMV Integrated Circuit Card Specifications for Payment Systems: Book 3, Application Specification, Version 4.3, November 2011

57. The Accused Instrumentalities of the Comerica Defendants infringe at least the claims of the '712 patent, which provide methods and systems for initiating secure sessions with web-browsing enabled wireless devices, including those that do not support cookies. In the '712 patent, a web server may send a security token to a wireless device. The security token may be stored on the wireless device in an encrypted form. One advantage of such storage is that the web server may at a later time determine if an additional HTTP request file received from the wireless device (i.e., the client) includes the security token before responding to the request. In at least one exemplary embodiment of the '712 patent, a client browser may transmit an appropriate URL to form a connection (i.e., in the form of an HTTP request) with a web server associated with a desired web site at an appropriate IP address. The request may contain various data, including a header that instructs the server to send back an appropriate response. The URL transmitted may also contain information related to the type of communication device, i.e., a PC-based device or a wireless device. The web server may grant or deny access based upon this information. The web server may also receive identification data associated with the client's browser. This identification information may identify the client's agent. Using this information, the web server may conduct an additional

or alternative validation step. The inventions disclosed in the '712 patent improve web security for wireless devices. Moreover, such inventions reduce manual intervention, reduce costs per transaction, maintain equity with market competitors in mobile servicing, and provide a gateway for mobile point service and payment services.

58. The Comerica Defendants infringe the '712 patent by initiating secure communications between users of Defendants' websites (e.g., www.comerica.com) and Comerica's web servers. Such users access Comerica's website to utilize Comerica's banking products by using their device, e.g., a PC-based device or wireless device.



<https://www.comerica.com/fraud-center/fraud-defense/computer-safety.html>

59. When a user logs in to a user Comerica account, the user's device sends an HTTP request that includes device model and client agent data, which is received by Comerica's web servers.

```

<meta name="description" content="
  Sign in to view your Comerica accounts, pay bills, and transfer balances.
">
<link href="https://webbanking.comerica.com/Comerica/login.aspx" rel="canonical">
https://webbanking.comerica.com/Comerica/login.aspx

```

60. The HTTP request received by Comerica from the user's device includes device model and client agent data.

Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content

5.5.3. User-Agent

The "User-Agent" header field contains information about the user agent originating the request, which is often used by servers to help identify the scope of reported interoperability problems, to work around or tailor responses to avoid particular user agent limitations, and for analytics regarding browser or operating system use. A user agent SHOULD send a User-Agent field in each request unless specifically configured not to do so.

User-Agent = product *(RWS (product / comment))

<https://tools.ietf.org/html/rfc7231#section-5.5.3>

61. Comerica compares device model and client agent data to authorized device models to determine whether to allow access or require secondary authentication. For example, if Comerica

detects unusual activity, such as the user logging in from an unrecognized device, the user will be prompted to enter a one-time password.

<https://www.comerica.com/fraud-center/fraud-defense/computer-safety.html>

62. The Accused Instrumentalities of the Comerica Defendants infringe at least the claims of the '101 patent, which provide methods and systems providing a privacy service for facilitating the auditing and control of privacy data. In the '101 patent, users provide their personal information (e.g., privacy data such as name, address, etc.) to a privacy service system. The user's privacy data is stored in a database associated with the privacy service. Users are allowed to audit the user's respective privacy data that is stored on the database. As part of a self-audit of the user's data, the user may be allowed to change the user's privacy data. The inventions disclosed in the '101 may be used for the early detection of various types of identity fraud. Users may utilize the disclosed privacy service systems to take appropriate actions, including notifying various financial institutions of any identity fraud. Such appropriate actions in response to the detection of identity fraud may also be taken automatically by the privacy service system.

63. The Comerica Defendants infringe the '101 patent by facilitating the self-auditing of users' privacy data. The Comerica Defendants provide users of Comerica's website with a username and password giving them access to their own account information. When a user creates

a banking account with Comerica, the user is prompted to enter the user's privacy data in the form of an email address and mobile number, which is subsequently collected and stored by Comerica.

How to enroll in Comerica Web Banking® and Comerica Web Bill Pay®

Enrolling in Comerica Web Banking®

In order to enroll in Comerica Web Banking®, customers must have one of the following account types in an open and active status:

- Checking
- Savings
- Money Market
- Certificate of Deposit (CD)
- Individual Retirement Account (IRA)
- Loan (Installment or HELOC)

Step 1 Go to www.Comerica.com and click the **Log In** button in the upper right corner

Step 2 Click on **Set Up**

Step 3 Complete the required fields and click **Continue Setup**

- Date of Birth
- Primary Account Number
- Account Type
 - ▶ Checking/Savings/Money Market
 - ▶ Certificate of Deposit (CD)
 - ▶ Home Equity Line of Credit
 - ▶ Individual Retirement Account
 - ▶ Installation Loan
- Customer Type
 - ▶ Personal
 - ▶ Small Business

Step 4 Enter the one-time password that was sent to your email

Step 5 Review and Accept Esign and Terms & Conditions

Step 6 Create your Web Banking Profile

- User ID
- Password*
- Security questions
- Confirm email address
- Enter a mobile number

<https://www.comerica.com/content/dam/comerica/en/documents/resources/personal/banking/online-services/How-to-Enroll-in-Real-Time-Enrollment.pdf>

64. A user self audits the user's privacy data by logging in to the user's account. The user is restricted from auditing privacy data of another user. The user navigates to the user profile section of the website and retrieves privacy data associated with the user, e.g., the user's email address. The user reviews and can change the privacy data as part of the audit process.

First Name: Stanley

Middle Name: (Optional)

Last Name: Washington

E-mail Address: StanleyW@protonmail.c

Confirm E-mail Address: StanleyW@protonmail.c

User ID: SWashington1 **Check Availability**

* Valid User IDs are 8 to 32 characters in length with no spaces and must be a combination of letters and numbers. The following special characters are allowed but are not required: ~ ! @ \$ ^ - _ + | . ? [] .

* Do not select a User ID that is similar to the password.

Temporary Password:

* Valid Passwords are 8 to 32 characters in length with no spaces, include upper and lower case characters, include at least one numeric digit, and include at least one special character such as - . , @ : ! \$ / .

* Passwords are case sensitive.

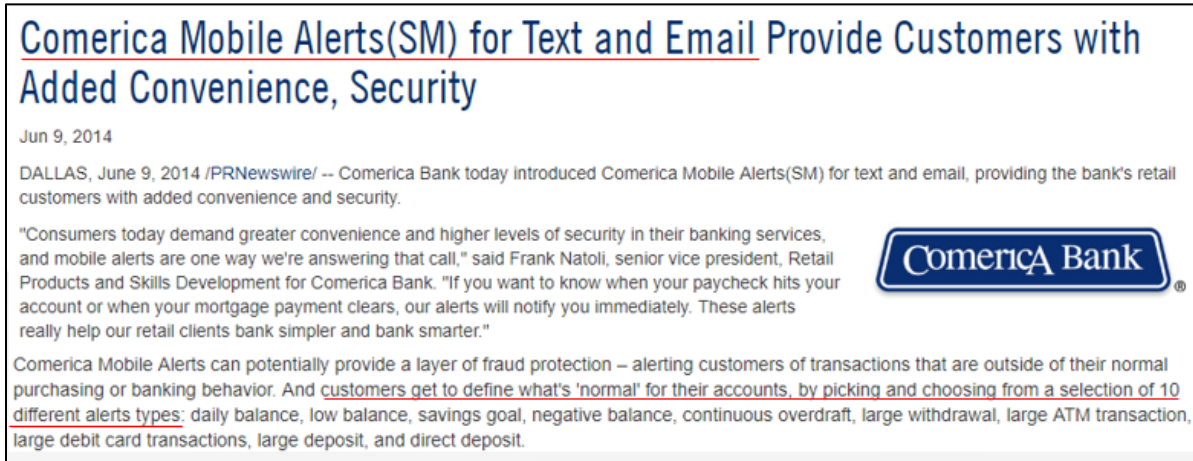
* Do not select a password that is similar to the User ID.

* Keep this information secure. We recommend changing the password every 30 days.

Confirm Temporary Password:

<https://www.comerica.com/fraud-center/fraud-defense/computer-safety.html>

65. The user is also provided with an alerts section of Comerica's website where the mobile number the user added to the account is displayed and presented for review. In the alerts section of Comerica's website, the user can change communication preferences, i.e., mobile number and email address, and the types of alerts that the user wishes to receive.



<http://comerica.mediaroom.com/news-releases?item=136931>

66. By utilizing EMV standards, the Accused Instrumentalities include Comerica's systems and methods for offering, providing, registering, facilitating, maintaining, transacting, authenticating, and processing commercial transactions via banking, credit card, debit cards, and other associated accounts that are covered by the Asserted Patents. Furthermore, the Accused Instrumentalities include systems and methods for initiating secure communications between users of Defendants' websites and Comerica's web servers and for providing self-auditing features of users' privacy data that are also covered by the Asserted Patents. Along with the above technology discussion, each respective Count below describes how the Accused Instrumentalities infringe on specific claims of the Asserted Patents.

COUNT I

(INFRINGEMENT OF U.S. PATENT NO. 7,953,671)

67. Plaintiff incorporates paragraphs 1 through 66 herein by reference.

68. Plaintiff is the assignee of the '671 patent, entitled "Methods and Apparatus for Conducting Electronic Transactions," with ownership of all substantial rights in the '671 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

69. The '671 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '671 patent issued from U.S. Patent Application No. 12/275,924.

70. The Comerica Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '671 patent in this District and elsewhere in Texas and the United States.

71. On information and belief, the Comerica Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '671 patent, which includes Comerica Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing banking, credit card, and debit card accounts and related products and services for Comerica's customers, consumers, and clients, as used in mobile payments and digital wallets.

72. Defendant Comerica Inc. directly infringes the '671 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '671 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

73. Defendant Comerica Inc. directly infringes the '671 patent through its direct involvement in the activities of its subsidiaries, including Defendant Comerica Bank, other

subsidiaries, and Elan Financial, including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Comerica. On information and belief, the Comerica Defendants' subsidiaries, partners, and affiliates conduct activities that constitute direct infringement of the '671 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using those Accused Instrumentalities. Specifically, Comerica Bank, as Comerica Inc.'s subsidiary, identifies itself, including via branding, as the Comerica entity that provides Comerica credit and debit cards to Comerica's clients, consumers, and customers.

74. Furthermore, the Comerica Defendants act through their agent and/or contract with Elan Financial to perform one or more steps of the claimed methods of the '671 patent. *Akamai Techs.*, 797 F.3d at 1023-24 (“[A]n actor is liable for infringement under § 271(a) if it acts through an agent ... or contracts with another to perform one or more steps of a claimed method.”). For example, on information and belief, Defendants direct and control Elan Financial in meeting the EMV standards for contactless and mobile payments so that Defendants' credit card customers may utilize such features in a point-of-sale transaction. As part of the Comerica Defendants' agreements with Elan Financial to provide credit card services, the Comerica Defendants establish the manner of the performance of such services, e.g., that such credit card transactions must support EMV standards for contactless and mobile payments, as a condition of Elan Financial's participation and as a benefit for Defendants. *See id.* (“[L]iability under § 271(a) can also be found when an alleged infringer conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.”). Elan Financial's activities in providing credit card services to Comerica, including as an issuer and creditor of Comerica-branded credit cards” are thus attributed to the Comerica Defendant such that the Comerica Defendants become the “single actor” chargeable with the direct infringement.

75. Apart from the liability arising from the Comerica Defendant's relationship with Elan Financial, Defendants also directly infringe the '671 patent via their own provision of debit card services that implement EMV standards in mobile or contactless debit card transactions. On information and belief, the Comerica Defendants are the issuers of Comerica-branded debit cards offered as personal and commercial products. *See, e.g., Put flexibility at your fingertips*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/debit-atm.html> (last visited March 11, 2022) (listing Comerica's debit cards).

76. The Comerica Defendants infringe claim 1 of the '671 patent via its Accused Instrumentalities that utilize methods that implement EMV standards for mobile or contactless payments. The Comerica Defendants provide, for example, to consumers payment cards, such as credit and debit cards, that support mobile or contactless payments that conform to the EMV standards. The Comerica Defendants' mobile payments can be facilitated by using mobile wallets such as Google Pay and Samsung Pay. The Comerica Defendants direct and control, including vicariously, via their alter egos, suppliers, agents, affiliates, partners, and subsidiaries, the operation of these mobile or contactless payments conducted using Comerica issued payment cards, including the provisioning, authenticating, and authorizing of mobile payment wallets and transactions therein.

77. The Accused Instrumentalities implement the method of claim 1 of the '671 patent. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused Instrumentalities include a method that implements the steps of forwarding, by a computer-based system for conducting a transaction, a challenge to an intelligent token of a client, wherein said intelligent token generates a challenge response, and wherein said computer-based system

comprises a processor and a non-transitory memory; receiving, by said computer-based system, said challenge response; assembling, by said computer-based system, credentials for a transaction in response to verifying said challenge response, wherein said assembled credentials include a key; receiving, by said computer-based system, a request from said client, wherein said request includes at least a portion of said assembled credentials provided to said client; validating, by said computer-based system, said portion of said assembled credentials with said key of said assembled credentials; and, providing, by said computer-based system, access to a transaction service in response to said validating.

78. At a minimum, the Comerica Defendants have known of the '671 patent at least as early as the filing date of this complaint. In addition, the Comerica Defendants have known about the '671 patent since at least February 16, 2019, when, via a letter, Plaintiff's affiliate Dominion Harbor Group, LLC ("DHG") initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On June 11, 2019, via an email to Defendants, DHG provided the Comerica Defendants with access to a data room containing claim charts for patents in the portfolio, including the '671 patent. After Plaintiff sought to schedule a call with the Comerica Defendants via a series of emails, Plaintiff sent a letter on April 1, 2020 (letter dated March 28, 2020) to the Comerica Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '671 Patent.

79. On information and belief, since at least the above-mentioned date when the Comerica Defendants were on notice of their infringement, the Comerica Defendants have actively induced, under U.S.C. § 271(b), their distributors, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include

or are made using all of the limitations of one or more claims of the '671 patent to directly infringe one or more claims of the '671 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute an infringement of the '671 patent.

80. On information and belief, the Comerica Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, suppliers, partners, customers, clients, subsidiaries, and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; adopting mobile payment and contactless payment standards and specifications (e.g., the EMV standards) to allow for interoperability of Comerica's Accused Instrumentalities with other mobile payment systems, including with mobile wallet applications; as payment card issuer, providing EMV payment applications, related tokens, and virtual account numbers to third-party mobile wallet providers, point of sale terminal providers, merchants (including online and mail order), and users; maintaining such EMV payment applications by personalizing transaction devices with the payment applications, generating and installing cryptographic keys, and processing transactions; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions or manuals for these products and related processes to purchasers and prospective buyers; testing Comerica's mobile and contactless payment features in the Accused Instrumentalities; providing websites (e.g., comerica.com) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and

using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers, including overdraft protection services, in the United States. *See, e.g., Mobile Wallets*, COMERICA, <https://www.comerica.com/personal-finance/banking/online-services/mobile-wallet.html> (last visited February 23, 2022) (encouraging consumers to “Select your mobile wallet below to learn how to add your Comerica credit or debit card, and change the way you pay today!”).

81. On information and belief, despite having knowledge of the ’671 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’671 patent, the Comerica Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Comerica Defendants’ infringing activities relative to the ’671 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

82. Plaintiff LPV has been damaged as a result of the Comerica Defendants’ infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants’ infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II

(INFRINGEMENT OF U.S. PATENT NO. 8,794,509)

83. Plaintiff incorporates paragraphs 1 through 82 herein by reference.

84. Plaintiff is the assignee of the ’509 patent, entitled “Systems and Methods for Processing a Payment Authorization Request over Disparate Payment Networks,” with ownership

of all substantial rights in the '509 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

85. The '509 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '509 patent issued from U.S. Patent Application No. 12/353,109.

86. The Comerica Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '509 patent in this District and elsewhere in Texas and the United States.

87. On information and belief, the Comerica Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '509 patent, which includes Comerica Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing banking, credit card, and debit card accounts and related products and services for Comerica's customers, consumers, and clients, as used in mobile payments and digital wallets.

88. Defendant Comerica Inc. directly infringes the '509 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '509 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

89. Defendant Comerica Inc. directly infringes the '509 patent through its direct involvement in the activities of its subsidiaries, including Defendant Comerica Bank, other subsidiaries, and Elan Financial, including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Comerica. On information and belief, the Comerica

Defendants' subsidiaries, partners, and affiliates conduct activities that constitute direct infringement of the '509 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using those Accused Instrumentalities. Specifically, Comerica Bank, as Comerica Inc.'s subsidiary, identifies itself, including via branding, as the Comerica entity that provides Comerica credit and debit cards to Comerica's clients, consumers, and customers.

90. Furthermore, the Comerica Defendants act through their agent and/or contract with Elan Financial to perform one or more steps of the claimed methods of the '509 patent. *Akamai Techs.*, 797 F.3d at 1023-24 (“[A]n actor is liable for infringement under § 271(a) if it acts through an agent ... or contracts with another to perform one or more steps of a claimed method.”). For example, on information and belief, Defendants direct and control Elan Financial in complying with the EMV standards for contactless and mobile payments so that Defendants' credit card customers may utilize such features in a point-of-sale transaction. As part of the Comerica Defendants' agreements with Elan Financial to provide credit card services, the Comerica Defendants establish the manner of the performance of such services, e.g., that such credit card transactions must support EMV standards for contactless and mobile payments, as a condition of Elan Financial's participation as a supplier to Defendants and in order to receive the benefit of acting as a supplier to Defendants. *See id.* (“[L]iability under § 271(a) can also be found when an alleged infringer conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.”). Elan Financial's activities in providing credit card services to Comerica, including as an issuer and creditor of Comerica-branded credit cards” are thus attributed to the Comerica Defendant such that the Comerica Defendants become the “single actor” chargeable with the direct infringement.

91. Apart from the liability arising from the Comerica Defendant's relationship with Elan Financial, Defendants also directly infringe the '509 patent via their own provision of debit card services that implement EMV standards in mobile or contactless debit card transactions. On information and belief, the Comerica Defendants are the creditor and issuer of Comerica-branded debit cards offered as personal and commercial products. *See, e.g., Put flexibility at your fingertips*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/debit-atm.html> (last visited March 11, 2022) (listing Comerica's debit cards).

92. For example, the Comerica Defendants infringe claim 1 of the '509 patent via its Accused Instrumentalities that utilize EMV standards for mobile or contactless payments. The Comerica Defendants provide, for example, to consumers payment cards, such as credit and debit cards that support mobile or contactless payments that conform to the EMV standards. The Comerica Defendants' mobile payments can be facilitated by using mobile wallets such as Google Pay and Samsung Pay. The Comerica Defendants, as the payment card issuer, direct and control, including via their alter egos, agents, suppliers, affiliates, partners, and subsidiaries, the operation of these mobile or contactless payments conducted using Comerica issued payment cards, including by provisioning the mobile devices with EMV-compliant card payment applications.

93. The Accused Instrumentalities implement the method of claim 1 of the '509 patent. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations is met. For example, the Accused Instrumentalities include a method implementing the steps of querying, by a computer-based system configured to facilitate a transaction, a payment system directory, wherein said payment system directory communicates with said computer-based system, and wherein said payment system directory comprises information regarding a plurality of candidate payment systems, and wherein

said payment system directory locates a candidate payment system for processing at least a portion of said transaction, wherein said candidate payment system receives payment information related to said transaction for developing a payment authorization, and wherein said payment information includes a proxy account number; transmitting, by said computer-based system, a payment authorization request related to said transaction to said candidate payment system; and receiving, by said computer-based system, said payment authorization from said candidate payment system.

94. At a minimum, the Comerica Defendants have known of the '509 patent at least as early as the filing date of this complaint. In addition, the Comerica Defendants have known about the '509 patent since at least February 16, 2019, when, via a letter, Plaintiff's affiliate Dominion Harbor Group, LLC ("DHG") initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On June 11, 2019, via an email to Defendants, DHG provided the Comerica Defendants with access to a data room containing claim charts for patents in the portfolio, including the '509 patent. After Plaintiff sought to schedule a call with the Comerica Defendants via a series of emails, Plaintiff sent a letter on April 1, 2020 (letter dated March 28, 2020) to the Comerica Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '509 Patent.

95. On information and belief, since at least the above-mentioned date when the Comerica Defendants were on notice of their infringement, the Comerica Defendants have actively induced, under U.S.C. § 271(b), their distributors, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '509 patent to directly infringe one or more claims of the '509 patent by using, offering for sale, selling, and/or servicing the

Accused Instrumentalities. Since at least the notice provided on the above-mentioned date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute an infringement of the '509 patent.

96. On information and belief, the Comerica Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, suppliers, partners, customers, clients, subsidiaries, and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; adopting mobile payment and contactless payment standards and specifications (e.g., the EMV standards) to allow for interoperability of Comerica's Accused Instrumentalities with other mobile payment systems, including with mobile wallet applications; as payment card issuer, providing EMV payment applications, related tokens, and virtual account numbers to third-party mobile wallet providers, point of sale terminal providers, merchants (including online and mail order), and users; maintaining such EMV payment applications by personalizing transaction devices with the payment applications, generating and installing cryptographic keys, and processing transactions; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions or manuals for these products and related processes to purchasers and prospective buyers; testing Comerica's mobile and contactless payment features in the Accused Instrumentalities; providing websites (e.g., comerica.com) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and

other consumers, including overdraft protection services, in the United States. *See, e.g., Mobile Wallets*, COMERICA, <https://www.comerica.com/personal-finance/banking/online-services/mobile-wallet.html> (last visited February 23, 2022) (encouraging consumers to “Select your mobile wallet below to learn how to add your Comerica credit or debit card, and change the way you pay today!”).

97. On information and belief, despite having knowledge of the ’509 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’509 patent, the Comerica Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Comerica Defendants’ infringing activities relative to the ’509 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

98. Plaintiff LPV has been damaged as a result of the Comerica Defendants’ infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants’ infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III

(INFRINGEMENT OF U.S. PATENT NO. 8,851,369)

99. Plaintiff incorporates paragraphs 1 through 98 herein by reference.

100. Plaintiff is the assignee of the ’369 patent, entitled “Systems and Methods for Transaction Processing Using a Smartcard,” with ownership of all substantial rights in the ’369 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

101. The '369 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '369 patent issued from U.S. Patent Application No. 12/505,164.

102. The Comerica Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '369 patent in this District and elsewhere in Texas and the United States.

103. On information and belief, the Comerica Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '369 patent, which includes Comerica Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing banking, credit card, and debit card accounts and related products and services for Comerica's customers, consumers, and clients, as used in mobile payments and digital wallets.

104. Defendant Comerica Inc. directly infringes the '369 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '369 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

105. Defendant Comerica Inc. directly infringes the '369 patent through its direct involvement in the activities of its subsidiaries, including Defendant Comerica Bank, other subsidiaries, and Elan Financial, including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Comerica. On information and belief, the Comerica Defendants' subsidiaries, partners, and affiliates conduct activities that constitute direct infringement of the '369 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling,

and/or using those Accused Instrumentalities. Specifically, Comerica Bank, as Comerica Inc.'s subsidiary, identifies itself, including via branding, as the Comerica entity that provides Comerica credit and debit cards to Comerica's clients, consumers, and customers.

106. Furthermore, the Comerica Defendants act through their agent and/or contract with Elan Financial to perform one or more steps of the claimed methods of the '369 patent. *Akamai Techs.*, 797 F.3d at 1023-24 (“[A]n actor is liable for infringement under § 271(a) if it acts through an agent ... or contracts with another to perform one or more steps of a claimed method.”). For example, on information and belief, Defendants direct and control Elan Financial in complying with the EMV standards for contactless and mobile payments so that Defendants' credit card customers may utilize such features in a point-of-sale transaction. As part of the Comerica Defendants' agreements with Elan Financial to provide credit card services, the Comerica Defendants establish the manner of the performance of such services, e.g., that such credit card transactions must support EMV standards for contactless and mobile payments, as a condition of Elan Financial's participation as a supplier to Defendants and in order to receive the benefit of acting as a supplier to Defendants. *See id.* (“[L]iability under § 271(a) can also be found when an alleged infringer conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.”). Elan Financial's activities in providing credit card services to Comerica, including as an issuer and creditor of Comerica-branded credit cards” are thus attributed to the Comerica Defendant such that the Comerica Defendants become the “single actor” chargeable with the direct infringement.

107. Apart from the liability arising from the Comerica Defendant's relationship with Elan Financial, Defendants also directly infringe the '369 patent via their own provision of debit card services that implement EMV standards in mobile or contactless debit card transactions. On

information and belief, the Comerica Defendants are the creditor and issuer of Comerica-branded debit cards offered as personal and commercial products. *See, e.g., Put flexibility at your fingertips*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/debit-atm.html> (last visited March 11, 2022) (listing Comerica's debit cards).

108. For example, the Comerica Defendants infringe claim 1 of the '369 patent via its Accused Instrumentalities that implement EMV standards for mobile or contactless payments. The Comerica Defendants provide, for example, to consumers payment cards, such as credit and debit cards that support mobile or contactless payments that conform to the EMV standards. The Comerica Defendants' mobile payments can be facilitated by using mobile wallets such as Google Pay and Samsung Pay, or such contactless payments can be facilitated by using microchips embedded on the physical credit or debit card of Comerica. The Comerica Defendants, as the payment card issuer, perform and/or direct and control, including via their alter egos, suppliers, agents, affiliates, partners, and subsidiaries, the operation of these mobile or contactless payments conducted using Comerica issued payment cards.

109. The Accused Instrumentalities implement the method of claim 1 of the '369 patent. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations is met. For example, the Accused Instrumentalities include a method implementing the steps of receiving, at a smartcard, a payment request for a transaction; determining, by the smartcard, a first payment system for processing at least a portion of the transaction, wherein said determining includes the smartcard querying payment directory information stored on the smartcard; and transmitting, by the smartcard, an identification of the first payment system to a point of service (POS) device, wherein the

identification is usable by the POS device to transmit a first authorization request related to at least a portion of the transaction to the first payment system.

110. At a minimum, the Comerica Defendants have known of the '369 patent at least as early as the filing date of this complaint. In addition, the Comerica Defendants have known about the '369 patent since at least February 16, 2019, when, via a letter, Plaintiff's affiliate Dominion Harbor Group, LLC ("DHG") initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On June 11, 2019, via an email to Defendants, DHG provided the Comerica Defendants with access to a data room containing claim charts for patents in the portfolio, including the '369 patent. After Plaintiff sought to schedule a call with the Comerica Defendants via a series of emails, Plaintiff sent a letter on April 1, 2020 (letter dated March 28, 2020) to the Comerica Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '369 Patent.

111. On information and belief, since at least the above-mentioned date when the Comerica Defendants were on notice of their infringement, the Comerica Defendants have actively induced, under U.S.C. § 271(b), their distributors, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '369 patent to directly infringe one or more claims of the '369 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute an infringement of the '369 patent.

112. On information and belief, the Comerica Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, partners, customers, clients, subsidiaries, and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; adopting mobile payment and contactless payment standards and specifications (e.g., the EMV standards) to allow for interoperability of Comerica's Accused Instrumentalities with other mobile payment systems, including with mobile wallet applications; as payment card issuer, providing EMV payment applications, related tokens, and virtual account numbers to third-party mobile wallet providers, point of sale terminal providers, merchants (including online and mail order), and users; maintaining such EMV payment applications by personalizing transaction devices with the payment applications, generating and installing cryptographic keys, and processing transactions; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions or manuals for these products and related processes to purchasers and prospective buyers; testing Comerica's mobile and contactless payment features in the Accused Instrumentalities; providing websites (e.g., [comerica.com](https://www.comerica.com)) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers, including overdraft protection services, in the United States. *See, e.g., Mobile Wallets*, COMERICA, <https://www.comerica.com/personal-finance/banking/online-services/mobile-wallet.html> (last visited February 23, 2022) (encouraging

consumers to “Select your mobile wallet below to learn how to add your Comerica credit or debit card and change the way you pay today!”).

113. On information and belief, despite having knowledge of the '369 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '369 patent, the Comerica Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Comerica Defendants' infringing activities relative to the '369 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

114. Plaintiff LPV has been damaged as a result of the Comerica Defendants' infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT IV

(INFRINGEMENT OF U.S. PATENT NO. 9,195,985)

115. Plaintiff incorporates paragraphs 1 through 114 herein by reference.

116. Plaintiff is the assignee of the '985 patent, entitled “Method, System, and Computer Program Product for Customer-level Data Verification,” with ownership of all substantial rights in the '985 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

117. The '985 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '985 patent issued from U.S. Patent Application No. 11/448,767.

118. The Comerica Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '985 patent in this District and elsewhere in Texas and the United States.

119. On information and belief, the Comerica Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '985 patent, which includes Comerica Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing banking, credit card, and debit card accounts and related products and services for Comerica's customers, consumers, and clients, as used in mobile payments and digital wallets.

120. Defendant Comerica Inc. directly infringes the '985 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '985 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

121. Defendant Comerica Inc. directly infringes the '985 patent through its direct involvement in the activities of its subsidiaries, including Defendant Comerica Bank, other subsidiaries, and Elan Financial, including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Comerica. On information and belief, the Comerica Defendants' subsidiaries, partners, and affiliates conduct activities that constitute direct infringement of the '985 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling,

and/or using those Accused Instrumentalities. Specifically, Comerica Bank, as Comerica Inc.'s subsidiary, identifies itself, including via branding, as the Comerica entity that provides Comerica credit and debit cards to Comerica's clients, consumers, and customers.

122. Furthermore, the Comerica Defendants act through their agent and/or contract with Elan Financial to perform one or more steps of the claimed methods of the '985 patent. *Akamai Techs.*, 797 F.3d at 1023-24 (“[A]n actor is liable for infringement under § 271(a) if it acts through an agent ... or contracts with another to perform one or more steps of a claimed method.”). For example, on information and belief, Defendants direct and control Elan Financial in complying with the EMV standards for contactless and mobile payments so that Defendants' credit card customers may utilize such features in a point-of-sale transaction. As part of the Comerica Defendants' agreements with Elan Financial to provide credit card services, the Comerica Defendants establish the manner of the performance of such services, e.g., that such credit card transactions must support EMV standards for contactless and mobile payments, as a condition of Elan Financial's participation as a supplier to Defendants and in order to receive the benefit of acting as a supplier to Defendants. *See id.* (“[L]iability under § 271(a) can also be found when an alleged infringer conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance.”). Elan Financial's activities in providing credit card services to Comerica, including as an issuer and creditor of Comerica-branded credit cards” are thus attributed to the Comerica Defendant such that the Comerica Defendants become the “single actor” chargeable with the direct infringement.

123. Apart from the liability arising from the Comerica Defendant's relationship with Elan Financial, Defendants also directly infringe the '985 patent via their own provision of debit card services that implement EMV standards in mobile or contactless debit card transactions. On

information and belief, the Comerica Defendants are the issuers of Comerica-branded debit cards offered as personal and commercial products. *See, e.g., Put flexibility at your fingertips*, COMERICA, <https://www.comerica.com/personal-finance/banking/cards/debit-atm.html> (last visited March 11, 2022) (listing Comerica's debit cards).

124. For example, the Comerica Defendants infringe claim 1 of the '985 patent via its Accused Instrumentalities that utilize methods that implement EMV standards for mobile payments. The Comerica Defendants provide, for example, to consumers payment cards, such as credit and debit cards that support mobile payments that conform to the EMV standards. The Comerica Defendants' mobile payments can be facilitated by using mobile wallets such as Google Pay and Samsung Pay. The Comerica Defendants, as the payment card issuer, perform and/or direct and control, including via their alter egos, agents, suppliers, affiliates, partners, and subsidiaries, the operation of these mobile payments conducted using Comerica issued payment cards. For example, Comerica's payment applications reside on chip card and mobile devices (including via Host Card Emulation), and such applications perform the steps necessary to accomplish the transaction, including, but not limited to, processing functions, storing information, and performing cryptographic processing.

125. The Accused Instrumentalities implement the method of claim 1. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations is met. For example, the Accused Instrumentalities practice the following method steps: receiving, by a computer system, an authorization request from a merchant for a transaction, wherein the authorization request indicates that the transaction has been initiated using a first transaction instrument corresponding to a user; based on the authorization request, the computer system determining a second transaction instrument corresponding to the

user; the computer system analyzing transaction data for the transaction, wherein the analyzing includes determining whether the transaction data at least partially corresponds to particular transaction data associated with the second transaction instrument; and based on said analyzing, the computer system transmitting a response to the authorization request to the merchant, wherein the response indicates whether the transaction is authorized.

126. At a minimum, the Comerica Defendants have known of the '985 patent at least as early as the filing date of this complaint. In addition, the Comerica Defendants have known about the '985 patent since at least February 16, 2019, when, via a letter, Plaintiff's affiliate Dominion Harbor Group, LLC ("DHG") initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On June 11, 2019, via an email to Defendants, DHG provided the Comerica Defendants with access to a data room containing claim charts for patents in the portfolio, including the '985 patent. After Plaintiff sought to schedule a call with the Comerica Defendants via a series of emails, Plaintiff sent a letter on April 1, 2020 (letter dated March 28, 2020) to the Comerica Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '985 Patent.

127. On information and belief, since at least the above-mentioned date when the Comerica Defendants were on notice of their infringement, the Comerica Defendants have actively induced, under U.S.C. § 271(b), their distributors, suppliers, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '985 patent to directly infringe one or more claims of the '985 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned

date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute an infringement of the '985 patent.

128. On information and belief, the Comerica Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, suppliers, partners, customers, clients, subsidiaries, and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; adopting mobile payment and contactless payment standards and specifications (e.g., the EMV standards) to allow for interoperability of Comerica's Accused Instrumentalities with other mobile payment systems, including with mobile wallet applications; as payment card issuer, providing EMV payment applications, related tokens, and virtual account numbers to third-party mobile wallet providers, point of sale terminal providers, merchants (including online and mail order), and users; maintaining such EMV payment applications by personalizing transaction devices with the payment applications, generating and installing cryptographic keys, and processing transactions; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions or manuals for these products and related processes to purchasers and prospective buyers; testing Comerica's mobile and contactless payment features in the Accused Instrumentalities; providing websites (e.g., comerica.com) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers, including overdraft protection services, in the United States. *See, e.g., Mobile*

Wallets, COMERICA, <https://www.comerica.com/personal-finance/banking/online-services/mobile-wallet.html> (last visited February 23, 2022) (encouraging consumers to “Select your mobile wallet below to learn how to add your Comerica credit or debit card, and change the way you pay today!”).

129. On information and belief, despite having knowledge of the '985 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '985 patent, the Comerica Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Comerica Defendants' infringing activities relative to the '985 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

130. Plaintiff LPV has been damaged as a result of the Comerica Defendants' infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT V

(INFRINGEMENT OF U.S. PATENT NO. 8,572,712)

131. Plaintiff incorporates paragraphs 1 through 130 herein by reference.

132. Plaintiff is the assignee of the '712 patent, entitled “Device Independent Authentication System and Method,” with ownership of all substantial rights in the '712 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

133. The '712 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '712 patent issued from U.S. Patent Application No. 13/413,847.

134. The Comerica Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '712 patent in this District and elsewhere in Texas and the United States.

135. On information and belief, the Comerica Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '712 patent, which includes Comerica Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing banking, credit card, and debit card accounts and related products and services for Comerica's customers, consumers, and clients, as used in mobile payments and digital wallets.

136. Defendant Comerica Inc. directly infringes the '712 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '712 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

137. Furthermore, Defendant Comerica Inc. directly infringes the '712 patent through its direct involvement in the activities of its subsidiaries, including Defendant Comerica Bank and other subsidiaries, including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Comerica. On information and belief, the Comerica Defendants' subsidiaries and affiliates conduct activities that constitute direct infringement of the '712 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using those

Accused Instrumentalities. Comerica Inc. is vicariously liable for this infringing conduct of its subsidiaries and affiliates, including Defendant Comerica Bank and other subsidiaries (under both the alter ego and agency theories) because, as an example and on information and belief, Defendant Comerica Inc, Comerica Bank, and other subsidiaries are essentially the same company. Comerica Inc. and Comerica Bank have the right and ability to control other subsidiaries' infringing acts, and each receives a direct financial benefit from their infringement.

138. For example, the Comerica Defendants infringe claim 1 of the '712 patent via its Accused Instrumentalities that utilize methods that initiate secure communications between the communication device of a user of Comerica's services and web servers. The Comerica Defendants provide, for example, to consumers a user interface via Comerica's website (www.comerica.com), which allows users to securely login to their Comerica account via their communication devices, utilizing authentication processes covered by at least claim 1 of the '712 patent. The Comerica Defendants, as the owner and operator of the Comerica website, direct and control, including via their alter egos, suppliers, agents, affiliates, partners, and subsidiaries, the operation of these authentication processes conducted using Comerica's online interfaces with users.

139. The Accused Instrumentalities implement the method of claim 1 of the '712 patent. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations is met. For example, the Accused Instrumentalities include a receiving, by a computer based system for initiating a secure communication session, a http request file and browser identification data, wherein the http request file includes client agent data and communication device model data; analyzing, by the computer based system, the browser identification data to selectively grant access to proceed based upon a determination that a device sending the http request file is a supported type of device; at least one

of by the computer based system, comparing the client agent data to authorized client agents, or comparing the communication device model data to authorized communication device models on an associated database; and based on the comparing, at least one of: configure, grant, or deny access, by the computer based system, to the host web server.

140. At a minimum, the Comerica Defendants have known of the '712 patent at least as early as the filing date of this complaint. In addition, the Comerica Defendants have known about the '712 patent since at least February 16, 2019, when, via a letter, Plaintiff's affiliate Dominion Harbor Group, LLC ("DHG") initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On June 11, 2019, via an email to Defendants, DHG provided the Comerica Defendants with access to a data room containing claim charts for patents in the portfolio, including the '712 patent. After Plaintiff sought to schedule a call with the Comerica Defendants via a series of emails, Plaintiff sent a letter on April 1, 2020 (letter dated March 28, 2020) to the Comerica Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '712 Patent.

141. On information and belief, since at least the above-mentioned date when the Comerica Defendants were on notice of their infringement, the Comerica Defendants have actively induced, under U.S.C. § 271(b), their distributors, suppliers, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '712 patent to directly infringe one or more claims of the '712 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned

date, the Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute an infringement of the '712 patent.

142. On information and belief, the Comerica Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, suppliers, partners, customers, clients, subsidiaries, and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; creating online interfaces for users to securely access their Comerica accounts via their communication devices; generating and installing cryptographic keys, and processing transactions; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions, videos, or manuals for these products and related processes to purchasers and prospective buyers; providing websites (e.g., [comerica.com](https://www.comerica.com)) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers, including computer safety and fraud protection services, in the United States. *See, e.g., Computer Safety, COMERICA, https://www.comerica.com/fraud-center/fraud-defense/computer-safety.html* (last visited February 23, 2022) (“Your security is important to us. At Comerica, we want to provide tools and resources to help prevent Internet fraud and have assembled a partial list of tips to keep your personal information out of the wrong hands.”).

143. On information and belief, despite having knowledge of the '712 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '712 patent, the

Comerica Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Comerica Defendants' infringing activities relative to the '712 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

144. Plaintiff LPV has been damaged as a result of the Comerica Defendants' infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT VI

(INFRINGEMENT OF U.S. PATENT NO. 6,886,101)

145. Plaintiff incorporates paragraphs 1 through 144 herein by reference.

146. Plaintiff is the assignee of the '101 patent, entitled "Privacy Service," with ownership of all substantial rights in the '101 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

147. The '101 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '101 patent issued from U.S. Patent Application No. 10/283,434.

148. The Comerica Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '101 patent in this District and elsewhere in Texas and the United States.

149. On information and belief, the Comerica Defendants design, develop, manufacture, distribute, sell, offer for sale, and use the Accused Instrumentalities that infringe the '101 patent, which includes Comerica Defendants' offering, issuing, providing, registering, facilitating, maintaining, transacting, authenticating, and processing banking, credit card, and debit card accounts and related products and services for Comerica's customers, consumers, and clients, as used in mobile payments and digital wallets.

150. Defendant Comerica Inc. directly infringes the '101 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using the Accused Instrumentalities, their components, and/or products and processes containing the same that incorporate the fundamental technologies covered by the '101 patent to, for example, its alter egos, agents, intermediaries, distributors, customers, subsidiaries, partners, affiliates, clients and/or consumers.

151. Furthermore, Defendant Comerica Inc. directly infringes the '101 patent through its direct involvement in the activities of its subsidiaries, including Defendant Comerica Bank and other subsidiaries, including by selling, offering for sale, and servicing the Accused Instrumentalities in the U.S. directly for Comerica. On information and belief, the Comerica Defendants' subsidiaries and affiliates conduct activities that constitute direct infringement of the '101 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or using those Accused Instrumentalities. Comerica Inc. is vicariously liable for this infringing conduct of its subsidiaries and affiliates, including Defendant Comerica Bank and other subsidiaries (under both the alter ego and agency theories) because, as an example and on information and belief, Defendant Comerica Inc, Comerica Bank, and other subsidiaries are essentially the same company. Comerica Inc. and Comerica Bank have the right and ability to control other subsidiaries' infringing acts, and each receives a direct financial benefit from their infringement.

152. For example, the Comerica Defendants infringe claim 1 of the '101 patent via its Accused Instrumentalities that utilize methods that facilitate self audit of a user's privacy data. The Comerica Defendants provide, for example, account creation and registration processes to consumers allowing users to sign up for "web banking," and "web bill pay" services via Comerica's website, www.comerica.com. The enrollment process includes prompts from the Comerica website for a user's privacy data which is stored on web servers. Users are allowed to review and change their privacy data utilizing the user profile section of their online account or, in the alerts section, the user can change communications preferences, including the types of alerts the user wishes to receive. The Comerica Defendants, as the owner and operator of the Comerica website, direct and control, including via their alter egos, suppliers, agents, affiliates, partners, and subsidiaries, the operation of these self-auditing processes conducted using Comerica's online interfaces with users.

153. The Accused Instrumentalities implement the method of claim 1 of the '101 patent. The technology discussion above and the example Accused Instrumentalities provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused Instrumentalities include a method for facilitating a self audit of a first privacy data associated with a first user and a second privacy data associated with a second user. The method including the following steps: collecting the first privacy data associated with the first user; storing the first privacy data in a central database; collecting the second privacy data associated with the second user; storing the second privacy data in the central database; facilitating the first user to self audit the first privacy data, wherein the first user is restricted from auditing the second privacy data, and wherein the self audit comprises: retrieving audit information for the stored first privacy data; reviewing the retrieved audit information; and changing a first privacy policy and the first privacy data associated with the first user based on the first user's review of the audit information; and

facilitating the second user to self audit the second privacy data, wherein the second user is restricted from auditing the first privacy data, and wherein the self audit comprises: retrieving audit information for the stored second privacy data; reviewing the retrieved audit information; and changing a second privacy policy and the second privacy data associated with the second user based on the second user's review of the audit information.

154. At a minimum, the Comerica Defendants have known of the '101 patent at least as early as the filing date of this complaint. In addition, the Comerica Defendants have known about the '101 patent since at least February 16, 2019, when, via a letter, Plaintiff's affiliate Dominion Harbor Group, LLC ("DHG") initially informed Defendants of Plaintiff's acquisition of the American Express patent portfolio. On June 11, 2019, via an email to Defendants, DHG provided the Comerica Defendants with access to a data room containing claim charts for patents in the portfolio, including the '101 patent. After Plaintiff sought to schedule a call with the Comerica Defendants via a series of emails, Plaintiff sent a letter on April 1, 2020 (letter dated March 28, 2020) to the Comerica Defendants inviting them to engage in licensing discussions relating to Plaintiff's patent portfolio, including the '101 Patent.

155. On information and belief, since at least the above-mentioned date when the Comerica Defendants were on notice of their infringement, the Comerica Defendants have actively induced, under U.S.C. § 271(b), their distributors, partners, customers, clients, subsidiaries, and/or consumers and also other payment platforms (e.g., Samsung and Google mobile wallets) that distribute, purchase, offer to sale, sell, use, and service the Accused Instrumentalities that include or are made using all of the limitations of one or more claims of the '101 patent to directly infringe one or more claims of the '101 patent by using, offering for sale, selling, and/or servicing the Accused Instrumentalities. Since at least the notice provided on the above-mentioned date, the

Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute an infringement of the '101 patent.

156. On information and belief, the Comerica Defendants intend to cause, and have taken affirmative steps to induce, infringement by distributors, partners, customers, clients, subsidiaries, and/or consumers and other payment platforms used with the Accused Instrumentalities by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Instrumentalities; creating online interfaces for users to securely access their Comerica accounts and self audit their privacy data via their communication devices; generating and installing cryptographic keys, and processing transactions; creating and/or maintaining established distribution channels for the Accused Instrumentalities into and within the United States; manufacturing and designing the Accused Instrumentalities in conformity with U.S. laws and regulations; distributing or making available instructions, videos, or manuals for these products and related processes to purchasers and prospective buyers; providing websites (e.g., [comerica.com](https://www.comerica.com)) and mobile applications for clients, customers, and consumers for registering, activating, maintaining, and using (including accessing infringing features of) the Accused Instrumentalities, and/or providing technical support, replacement parts or services for these products and services to purchasers and other consumers, including computer safety and fraud protection services, in the United States. *See, e.g., Computer Safety*, COMERICA, <https://www.comerica.com/fraud-center/fraud-defense/computer-safety.html> (last visited February 23, 2022) (“Your security is important to us. At Comerica, we want to provide tools and resources to help prevent Internet fraud and have assembled a partial list of tips to keep your personal information out of the wrong hands.”).

157. On information and belief, despite having knowledge of the '101 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '101 patent, the

Comerica Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. The Comerica Defendants' infringing activities relative to the '101 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

158. Plaintiff LPV has been damaged as a result of the Comerica Defendants' infringing conduct described in this Count. Each Defendant is thus, jointly and severally, liable to LPV in an amount that adequately compensates LPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

CONCLUSION

159. Plaintiff is entitled to recover from Defendants the damages sustained by Plaintiff as a result of Defendants' wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

160. Plaintiff has incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action. The circumstances of this dispute may give rise to an exceptional case within the meaning of 35 U.S.C. § 285, and Plaintiff is entitled to recover its reasonable and necessary attorneys' fees, costs, and expenses.

JURY DEMAND

161. Plaintiff hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

PRAYER FOR RELIEF

162. Plaintiff requests that the Court find in its favor and against Defendants and that the Court grant Plaintiff the following relief:

1. A judgment that Defendants have infringed the Asserted Patents as alleged herein, directly and/or indirectly by way of inducing infringement of such patents;
2. A judgment for an accounting of damages sustained by Plaintiff as a result of the acts of infringement by Defendants;
3. A judgment and order requiring Defendants to pay Plaintiff damages under 35 U.S.C. § 284, including up to treble damages as provided by 35 U.S.C. § 284, and any royalties determined to be appropriate;
4. A judgment and order requiring Defendants to pay Plaintiff pre-judgment and post-judgment interest on the damages awarded;
5. A judgment and order finding this to be an exceptional case and requiring Defendants to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285; and
6. Such other and further relief as the Court deems just and equitable.

Dated: March 15, 2022

Respectfully submitted,

/s/ Terry A. Saad

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